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Letters

SOCIOLOGY OF HUNTING

The article in the February 1981 issue of *Virginia Wildlife* entitled "Sociology of Hunting" is completely mistitled. There is no "sociology" whatsoever, nor any of the methodological approaches that sociologists use, in this article. This article is a defense of hunting and an attack on its critics, an opinion article, pure and simple. The wildlife management and social benefits [listed] are results of hunting, not reasons hunters hunt. No one goes hunting thinking, "I'll go hunting today to help wildlife conditions."

All the reasons listed in the "personal" category are the same reasons people go hiking or camping. A person could easily get [the same] benefits without actually hunting.

I think an important reason hunters enjoy hunting (although few will admit to this reason) is that it is an ego booster and an enhancer of their self-image. I have no wish to eliminate or curtail hunting. However, I do wish hunters would stop justifying themselves and their motives with such lofty statements of all the wonderful things they are doing.

Helene Haluska
Chesapeake

Alan Krug's simplistic "Sociology of Hunting" and his accusatory statements against "anti-hunting" groups and individuals are unfounded and not convincing. The controversy is not so much one of pro or con hunting: both sides need to recognize that some hunters are responsible, and others are irresponsible. The skilled, responsible hunter deserves the respect even of those of us who do not share his point of view, but how many so-called hunters are out there whose motivations and actions are not nearly as noble and beneficial to wildlife and society as Mr. Krug would have us believe. A gun, pickup truck and camouflage do not alone make a hunter.

This article is below the standards of objectivity normally associated with *Virginia Wildlife*.

Sigrid H. Philips
Abingdon

FEBRUARY INSPIRATION

For some time now, friends of ours from Virginia have delighted us with the gift of *Virginia Wildlife*.We've always enjoyed it and passed it on to friends who are nature lovers, hunters, fishermen, and amateur nature lovers all rolled into one.

I'm writing to tell you that, for me, the February 1981 magazine was the best that I've received; the articles surpass all others. I'm a nature lover, not a hunter or fisher or photographer, but many of the articles inspired me to write this letter of appreciation.

Thanks for the delightful reading.

Jo Sills
Charles City, Iowa

We always hope that we're improving with each issue: thanks for the words of encouragement!—Assistant Editor.

Editorial

TAKE A KID FISHING

The theme of the 1981 National Fishing Week is "Take a Kid Fishing." The program is one of many projects of the American Fishing Tackle Manufacturer's Association. Its purpose is to encourage the involvement of young people in fishing activities.

Kids take naturally to fishing and have a ball. Unlike other action sports, fishing is something a person can continue to actively enjoy throughout his lifetime. Fishing gets young people in close touch with nature, something often lacking in our modern urban life style. It promotes companionship and communication between generations, also rare in these times. It is a unisex sport that boys and girls can participate in equally.

Fishing gear is inexpensive as sporting equipment goes. A simple pole, line and hook can be rigged for nearly nothing while quality tackle can be had for a few dollars. Unlike most other sports, fishing develops individual skills. It can be as challenging as the angler wants to make it.

In spite of all its merits, few communities promote fishing as an organized recreational activity. Basketball baseball and football still dominate most sports programs in spite of the number who get quality participation.

If you are interested in changing this situation, there are many ways to help get the AFTMA National Youth Fishing Program started in your community. You can start one yourself. Complete instructions are available in the leader's guide and instructional kit available from AFTMA. It's all covered, from building community interest to raising money, to recruiting volunteers. You may choose to be a sponsor. Tackle, hot dogs and soda pop are needed for a successful group fishing expedition. You may want to volunteer as an instructor or counselor. Included is an instructional guide showing how to teach fishing techniques. You can order one for $7.00 from AFTMA Center, 2625 Clearbrook Drive, Arlington Heights, Illinois 60005.

Eighty-two percent of all fishermen learned to fish as youngsters, according to recent surveys. Unlike most modern-day sports, fishing has evolved from man's earliest experiences in gathering food for his family. Now the future of this sport rests with our youth. —*H.L.G.*

In nature's scheme of things, fawns are born at a time when their chances for survival are optimal. The majority of white tail fawns in Virginia are born in May and June, when lush early summer vegetation provides adequate nutrition for lactating does, as well as good cover for newborn fawns. Fawns are born following a gestation period of 194 to 200 days, and the breeding season peak is usually concentrated around late November.

Fawns are born most frequently as singles or twins. Sometimes triplets are born, but they are rare. The number of fawns born is influenced by the nutrition level of the does before breeding. Doe-fawns, those which breed in their first year of life, usually have single fawns. In Virginia, probably less than half of the doe-fawns breed during their first year.

Before the birth of her fawns, a doe seeks out a suitable place for the event. One study (Reed et al. 1974) has shown that the doe chooses a site well away from the center of her home range. In this study, newborn fawns were tagged and their activity observed together with their mothers over the next several months. Based on subsequent home range of the fawns and their mothers, the original tagging site was significantly

John Ebeling

Fawning Time

May is fawning time for Virginia's white-tails

by Patrick F. Scanlon

Leonard Lee Rue

farther from the center of activity than all other sightings. From this they concluded that there was a tendency by a doe to select an area on the edge of her home range for the birth of her fawns. This may be an attempt by the doe to conceal the fawn. Does usually hide very young fawns between nursings. Later, young fawns are with the does all day when they are able to run swiftly. This stage is reached within two weeks.

Before fawns have developed the speed necessary to outrun dangers, they use other defenses. They are relatively scentless so are not readily detected by mammalian predators. The coloring of the fawn's coat with its spotting provides good camouflage. They also have the ability to play 'possum and will lie prone to avoid detection.

Some limited observations on daytime activities of fawns in Illinois were made by Kjos and Montgomery (1969). They studied the resting areas of two fawns. One was orphaned and hand-raised, but otherwise allowed to roam free. The other was raised by its mother. Both fawns used a relatively small area during the course of the summer. Daytime bedding areas of the fawns were studied. About half of the sites used had overhead cover, and the temperatures of the bed-sites were three to four degrees cooler than the prevailing temperatures. Bed-sites seemed to have been chosen which afforded dense ground cover and provided excellent concealment from the side.

Rather little information is available on the frequency of nursing by does, though it is probably at infrequent intervals. The composition of doe milk is very rich, having higher total solids, protein percentage, and fat percentage than cow's milk. The persistence of lactation in deer is variable. Examination of does taken during hunting season in South Carolina showed that a high proportion of does were still lactating (Scanlon and Urbston 1978). Almost 90 percent of the does were lactating in October and more than 50 percent of does were still lactating in December. Although experts believe that lactation usually persists for a relatively short period of time, there are considerable advantages of a longer lactation to the fawns. The nutritional aspects in fall are probably minimal but the fact that lactation is still persisting means that the doe-fawn relationship is still intact and the fawn benefits by the experience of the doe at the onset of its first winter. The fact that lactation is still going on during the breeding season does not interfere with normal breeding activity of the doe (Scanlon et al. 1976).

If you find a "lost" or unattended fawn, please *leave it alone*. Fawns are rarely lost; most probably, its mother has left it hidden and fully intends to return to tend and nurse it. Such fawns are not yet capable of accompanying their mothers all day, and if frightened, they adapt the prone position, hoping the danger will pass. In this position, they are easy to pick up and carry off. Home rearing is seldom successful. When it is, there may be problems with the full-grown deer later on, especially if it is a male. Interference with the fawn may, in fact, lead predators to it by destroying its scentless condition.

It is illegal to keep a wild animal in captivity. The best approach, when one finds an unattended fawn in the wild, is to leave it alone and trust its mother to return and look after it. □

Patrick F. Scanlon is on the faculty of the Department of Fisheries and Wildlife Sciences at Virginia Tech in Blacksburg.

Leonard Lee Rue

Summer of the Eagle

"The summer of the eagle was a magnificent experience; our visitor came for many weeks with almost clock-like regularity."

by Josephine W. Hubbell

Sometimes we characterize a given period of time by some outstanding event that occurred during that time. Several years ago, we began to associate our summers the activities of the wildlife with whom we shared our environs.

Each summer for the past twenty years, we have packed up and moved for 12 weeks from the suburbs of Washington to the relative serenity and solitude of woods and water at our summer cottage on a little creek that feeds into the Chesapeake Bay. Here, with the water in front of us and the woods behind us, we have been able to unobtrusively become friends and observers of some of the wildlife that makes its home in the vicinity.

We have all our meals on the porch, weather permitting. One summer for several weeks there was hardly a day that we did not have lunch with an indigo bunting. He would zero in, always from the same direction, to one of the electric wires strung in the corner of the porch. He would stare intently at us for a while, then dart over to the bird bath for a splash around, return to the wire, preen and fluff himself, and then be off.

For two summers, we had a green tree frog who lived in our outside shower. I did not realize that frogs practiced such extremes of camouflage. He was rarely on any part of the shower except the green fiberglass wall. In the evenings when he would leave his near-perfect-color hideaway, he would occasionally treat us to a solo serenade from the screen of the kitchen window near the shower.

Almost every summer has been a summer of whip-poorwills. More properly, they are with us at dusk and pre-dawn on spring weekends until the fourth of July, and sometimes return for a few evenings in late August. Their call, ranging from plaintive to strident, is recognized by many; I suspect few bird watchers can claim more than having heard them. However, in recent summers, I have sometimes been able to glimpse one rising from the ground and flying silently through low branches until he is quickly gone into the near dark. A favorite place for calling has been in a patch of woods behind the tool shed. Wearing dark clothing, I have managed to reach the back corner of the shed and then move from tree to tree, keeping each tree between me and the location of the call, rather like a stealthy character in a spy movie. In this manner, I have been rewarded by fleeting glances of a whip that would raise only a few yards from me. Many times he can elude me even from this short distance, but when that happens I can generally hear the low clucking that begins when the calling stops, and the soft whir of wings as he flies unseen farther into the woods. On even rarer occasions, I have seen a whippoorwill or a poorwill's widow silhouetted against the darkening sky, its low, erratic flight carrying it from woods to woods.

Many years ago, our cat, Columbus, introduced us to a little creature of the wild in a novel way. One night we heard what we thought was Columbus, scurrying a few

feet up one of the big pines in the yard and turning abruptly to do a spread-eagle leap back down to the ground. Hearing these noises, I fanned the flashlight out from the front door and sure enough, it picked up Columbus sitting at the base of a nearby pine tree. Nothing seemed unusual, but a short while later when the noise was repeated, the flashlight revealed her looking very intently up into the tree, paying no attention at all to my playing the light on her. Thinking she had treed a squirrel, I walked out to see if I could find it.

Some 30 feet up in the pine, on one of the lower branches, my flashlight caught two alarmed little eyes, but they did not belong to a squirrel — it was a raccoon. Head and forepaws curled around one side of the limb and tail curled around the other side, Columbus had him treed for quite some time, and would not permit the raccoon to come down. Now *dogs* tree raccoons, but raccoons have been known to chase, attack and harm cats. However, knowing Columbus feared neither man nor beast, there was really nothing strange about this episode. We rescued the raccoon by gathering up Columbus and carrying her into the house. In a very few minutes we heard the raccoon descend the tree and disappear into the night. This happened early in the summer, and as a result, a friendship of sorts was established between Columbus and the raccoon.

We had three consecutive summers of the crazy cardinal. This little drama started on an early spring weekend. A female cardinal devoted part of every day to attacking the two cars that were parked in the driveway circle. I say "attack," because it is the only word that describes her flying and hurling herself, literally, from the ground up to any part of the front or rear bumper, or the front or back of the outside rear view mirror. She would frantically beat her wings in order to maintain a position in front of the bumper or mirror while she pecked with considerable force at one or the other. The strength of her assaults were evidenced by delicate but permanent scratches on the cars around the areas she attacked.

The year of the deer began in early spring and continued into fall when a family of four Virginia whitetails became frequent and quite friendly visitors. Their home, we felt certain, was the patch of about 30 acres of woods near the cottage. We got to know the buck and his doe first. They came stepping out of the woods near the fruit trees to see what delicacies the trees had to offer. They would, of course, stand and watch us as intently as we watched them. Early one morning as I walked through the living room, I glanced out the front windows and there, no more than 20 feet away, silhouetted by the water beyond them, were the mother and her two fawns. They were frozen, looking towards the windows, for I am sure that they saw my movement inside before I saw them. That summer there were many special thrills as we saw deer leaping across the lane from woods to woods, or swimming across the creek, or browsing through the garden or under the fruit trees.

The past two summers will have to be known as the summers of the red-headed woodpeckers. We were visited by a pair (and for a brief period, two pair) of these strikingly-marked birds that nested in a tall dead pine on the lot. We could see them virtually any time of day, their brilliant coats catching the sunlight as they worked their way up, down and around the pine trunks quite close to the house. What struck me as unusual about them was their habit of hopping on the ground, like cardinals or robins, and venturing so close to the house, right under the azaleas that border the porch. I never knew, until I saw it happen several times, that red-headed woodpeckers will invariably approach a tree on which they intend to light by swooping upward to it, even if they make contact only four for five feet above the ground.

Overlapping some of the specially-designated summers, we have had a pair of distinguished little residents. They are crested flycatchers, who distinguished themselves by nesting in our martin house. I shall always be amazed at the speed and unerring accuracy with which they fly into the nest entrance without first pausing on the ledge outside it.

The summer of the eagle was a magnificent and rich bird-watching experience, and a rare privilege. The eagle came for many weeks with almost clock-like regularity. He came from the same sector of the sky across the creek and soared directly towards the front of the cottage, veering slightly as he glided over the pine tops in the yard to alight on the branch of a large red oak tree less than four feet from the house. Less frequently, he would stop at another oak about 100 feet up the creek near the boats. After a pause lasting up to half an hour, he continued on up the creek and out of sight. His visits occurred each morning around seven o'clock, and as if it were not enough that we saw him almost every morning at extremely close range, sometimes his mate flew with him. Imagine seeing one or two American bald eagles while breakfasting on the porch! These great birds are known to have one of their few active nesting areas in that part of Virginia immediately south of the mouth of the Potomac River on the shore of the Chesapeake Bay, and while there are those who from time to time have seen an eagle in the vicinity, the bird is at a height so great that the distinctive white tail and head are barely discernible without field glasses.

There is so much to see and hear when we live for brief periods together with the wildlife of a certain area. These fascinating creatures, from the tiny tree frog to the magnificent eagle, afford a rare joy to anyone who chooses to look and listen. Perhaps they are not as impressed with us as we are with them, but they tolerate us just the same. □

Best-Kept Secret

The Eastern Shore's annual seafood festival

by Carl Cahill

On the first Wednesday in May, the communities of Accomac and Northampton welcome travelers and seafood lovers from miles around. The festival's menu includes clams, oysters, fish, french fried sweet potatoes, hush puppies, and more, all in epic proportions.

One day in October a prominent Norfolk attorney and former member of the House of Delegates stopped an acquaintance on the street.

"I'm in trouble," he said, "deep trouble. I can't get any tickets to the Seafood Festival."

The lawyer was indeed in deep trouble, for he suddenly found himself unable to spend a spring day on the barrier island of Chincoteague in bonhomie with many of his friends and the great and near-great of Virginia and Maryland.

"I sent in my check for four tickets," he went on in a tone reserved for the gravest announcements, "and they sent it right back. See what you can do for me."

There was little, if anything, the acquaintance could do for him, since all tickets had long since been sent out to bankers, judges, doctors, lawyers, legislators, governors, political candidates and just plain folk who are lovers of good seafood.

The demand for tickets for the annual Eastern Shore of Virginia Seafood Festival is so intense that certain ground rules have been established. Even so, thousands who would rather lose the family jewels than miss it are turned down.

Visitors to one Seafood Festival talk all year about attending the next one. Banks and other large firms buy blocks of tickets and distribute them to their directors and best customers who charter buses to the affair.

There are no scalpers. Anyone who has a ticket hangs onto it for dear life. The lawyer's acquaintance was afraid to intercede for him for fear of jeopardizing his own ducats.

The sponsor of the festival, the Eastern Shore Chamber of Commerce, is totally unlike other promoters. Chamber officials flinch when they see an article in a magazine or newspaper about their brainchild because they know it'll bring on a wave of requests for tickets. (Requests for tickets commonly arrive at the Chamber of Commerce 18 months in advance.)

The festival is always held on the first Wednesday in May. The place for placating the palate with piscatorial delights is Tom's Cove Park, a pine grove on this barrier island made famous by exceptional hunting and fishing and Misty, the horse known to thousands of children.

Even when the weather is bad it doesn't deter 4,000 seafood lovers from driving hundreds of miles to down 75,400 clams, 97 gallons of fried oysters, 50 bushels of raw oysters, 750 pounds of drumfish or trout (or whatever else local fishermen can haul in), 25,000 french fried sweet potatoes, 225 pounds of cole slaw, 6,000 hush puppies, 700 dozen loaves of bread, 300 gallons of beer and gallons and gallons of coffee, tea and soft drinks.

Originators of the festival are H.B. Rew, Jr., an Accomac banker and a past president of the Chamber of Commerce, and Leonard (Buddy) Burton, owner of Tom's Cove Park. They got their idea from the annual shad planking at Wakefield, 200 miles to the southwest.

Rew, Burton and the festival committee, however, made some major improvements. Where the shad planking has a limited menu — shad only — and is an all-male, all-day, politically-oriented affair with many yawn-inducing harangues from candidates, the Seafood Festival bill-of-fare is varied and attracts men, women and children.

The purpose, according to Rew, is to give tourism and the island's seafood industry a shot in the arm.

The first festival in 1969 brought only 1,000 people in chilly weather. The second attracted 1,500 in something less than ideal temperatures.

But word of the heaping plates of raw, steamed and fried goodness, fresh from the Atlantic Ocean, spread by word of mouth up and down the coast and 2,500 tickets were sold for the third festival which, like the first two, lost money.

The 2,500 visitors threatened to overwhelm the volunteer help and the Chamber of Commerce clamped a ceiling on the number of tickets sold.

Despite a downpour and a cold, northerly wind, a capacity crowd showed up at the festival in 1972 and a profit was turned. In 1973, the weather was mild and seafood lovers journeyed from Norfolk, Richmond, Salisbury, Maryland, Baltimore and and Washington, D.C. (The clamor for tickets got so bad after the 1973 festival that the committee printed 500 more and hired 150 people to help the 60 tired volunteer workers prepare and serve the meals.)

Another 350 complimentary tickets are sent out to political candidates, governors and legislators of both Maryland and Virginia. Speechmaking, however, is absolutely taboo, a terrible penalty to exact of a public officeholder. Indeed, the Chamber of Commerce does not brook so much as a welcoming address (which undoubtedly accounts for a lot of the festival's popularity.)

Gates to the park are opened at 1:00 p.m., but long before that hour people arrive and cluster in groups to savor the odor of frying fritters, hush puppies and steaming clams.

The festival committee upped the price of tickets from $7.50 to $10.00 per person for the 1974 event but is still staggered by the demand for tickets. Now, each person is limited to four tickets and they are offered to Chamber members first and then to the public, a clever strategy, since many people whose businesses are hundreds of miles away join the Eastern Shore Chamber of Commerce just to be eligible for the tickets.

Tickets do not go on sale until October 1 preceding the festival in the spring. Most are gone by October 2.

There were two innovations in 1974: rockfish muddle and a press conference. Thousands tried the muddle, best described as the Eastern Shore version of Brunswick stew. Only one reporter showed up for the press conference and he took Rew to task for trying to spoil an otherwise perfect festival with something so formal. The press conference has not been held since. Rockfish muddle hasn't been served since, either, because someone discovered it contained Smithfield ham, and the festival committee will serve only what is grown or caught on the Eastern Shore.

Between mouthfuls of oyster fritters, a local resident will

tell you that the Eastern Shore of Virginia, that narrow strip of land between the Chesapeake Bay the Atlantic, is 100 miles long and contains 700 square miles in two counties, Accomack and Northampton. (He'll emphasize, too, that the Town of Accomac lacks the "k" of Accomack County but neither he, nor anyone else, knows why.)

There are a few other facts he'll press on you: That Accomac (the town) has more restored Colonial architecture than any other place in America with the exception of Williamsburg (profits from the festival go toward restoring the Chamber of Commerce buidling which was constructed in 1819); that the oldest court records in the nation are in the counties of Accomack and Northampton and date back to 1632; and that farming, seafood and lumber are the main industries.

When you have digested all that information, lean back against a pine and watch the expressions of happiness on the faces of other seafood lovers as they put away second and third helpings. (A ticket entitles you to all you can eat.)

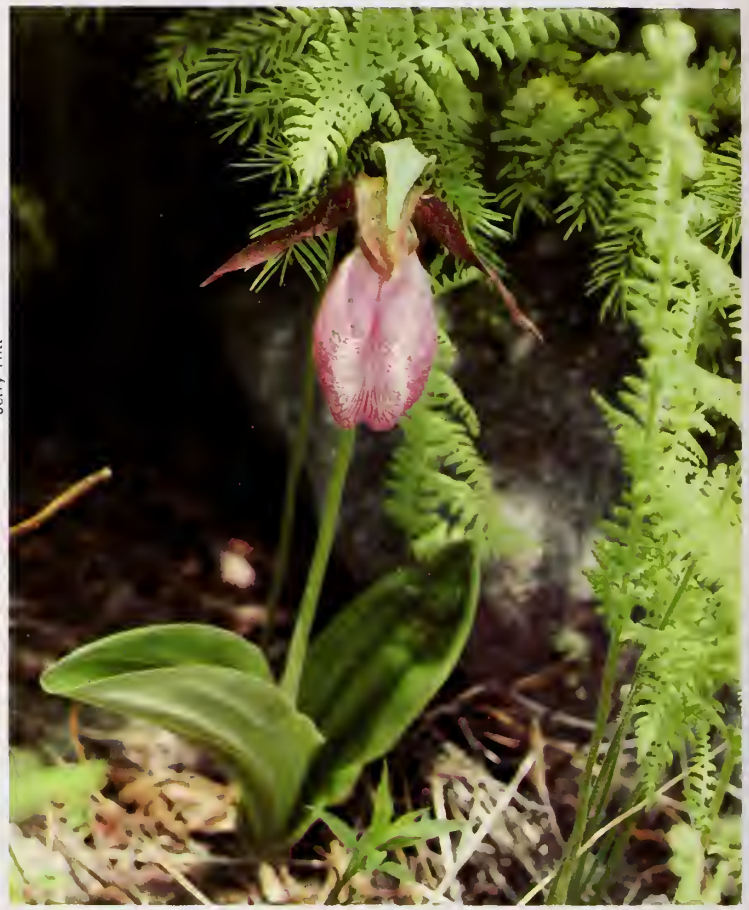
If you have a hankering to attend the next festival, make your plans now. But don't send in your reservations until October 1, or you'll clog up Chamber officials with paperwork.

It's a long wait, but it's worth it. □

Native Orchids

A Photo Essay

Joseph Fallis



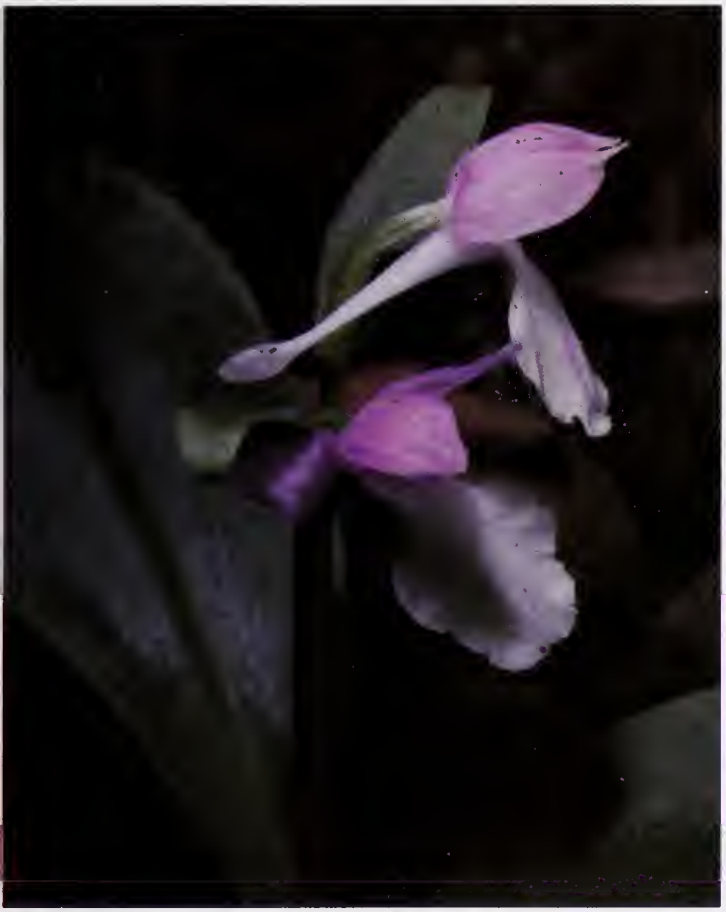
Jerry Tritt

Of all the families of flowers, the orchid seems to have found a special place in our sentiments. Forty-eight species are known to grow in Virginia, in a wide variety of habitats. A metropolitan area like Richmond might seem an unlikely place for such an exotic flower, but at least eleven species of orchids grow within the city limits.

The first member of the Orchid family to flower in this area in the spring is the pink lady's slipper (Cypripedium acaule), also known as the mocassin flower. This plant begins to bloom during the last week in April, its solitary, fragrant blossom borne at the top of a leafless stem, six to fifteen inches high, surrounded by two somewhat-hairy basal leaves. This orchid is usually found growing in colonies in pine and oak woods and wet thickets.

Next to flower, during the first week in May, are the showy orchis (Orchis spectabilis) and the puttyroot (Aplectrum hyemale). Both grow in the same type of habitat, preferring rich, shady woods. The showy orchis can grow to twelve inches in height. Usually, two broad and glossy basal leaves surround a smooth stem which bears two to six lavender and white flowers. This species may lie dormant for years between flowerings.

The puttyroot is so named for its former use as a source of glue for pottery and leather by the colonists and their descendants in the Appalachian Mountains. This plant produces a dozen or so tawny yellow



flowers tinged with maroon, set at the top of a leafless stem, twelve to twenty-four inches in height. This orchid may be found more easily in the winter than during flowering time, since its flowers blend in very well with their surroundings, whereas the large leaf (which is green all winter) is much more conspicuous.

The green adder's mouth (Malaxis unifolia) comes into bloom during the last week of June. It is a very small, inconspicuous orchid which grows in damp, shady woods and thickets. It can grow as tall as twelve inches, all with a solitary, sheathing leaf midway up the stem. While you may find as many as four dozen flowers on a single stem, you will need a magnifying glass to see them properly, since they are only one-eighth inch across.

The ragged fringed orchis (Habenaria lacera) perfers much the same habitat as the green adder's mouth, blooming a week or so later. The eight to thirty-two inch stem supports several leaves, largest towards the bottom. The dozen or more greenish-white flowers have a three-parted lower petal called a 'lip,' the ends of which taper off into many thin, string-like segments. This feature, and the long spur which extends out behind the flower, are characteristic of this genus.

Next to bloom, during the third week of July, is the downy rattlesnake plantain (Goodyera pubescens). To some orchid lovers, its basal rosette of silver-veined leaves, which persists throughout

the winter, are more attractive than the slender spike of one-quarter inch, greenish-white flowers. It is reported that some American Indians were so convinced that the leaves of this orchid, if eaten, were a certain cure for snakebite, that for a small fee they would allow a poisonous snake to bite them, provided a supply of the leaves was handy. This very fragrant orchid prefers the dry oak and pine woods of our area.

The small woodland orchis (Habenaria clavelatta) is known by several common names, one of which is frog spike. This plant, usually with one large leaf at the base of the stem, will come into bloom during the last week of July. Its greenish-yellow flowers, with their short spur and notched lip, grow at the top of a six- to eighteen-inch stem. Look for this orchid near bogs and damp thickets.

The cranefly orchid (Tipularia discolor) can be found in bloom during the second week of August. Although it seems to be the most commonly found orchid in this area, the combination of green, brown and purple in its stem and flowers make it difficult to pick out from the leaf litter of the oak woods in which it grows. Like the puttyroot, it has a single, pointed oval leaf, although smaller and with a purple underside, that persists through the winter, withering before the following year's plant flowers. The three-eighths-inch flowers, a dozen or more on a spike, do seem to resemble the insect for which they are named.

During the last week of August, look for the same type of habitat that the frog spike enjoys, and you

may find its botanical cousin, the yellow fringed orchis (Habenaria ciliaris). Several dozen bright, orange-yellow flowers are grouped at the top of a sparsely-leafed stem, one to two feet tall. The deeply-fringed lip of this plant is one-half inch long, and its nectar-filled spur just over an inch long.

Of this group, the last two species to bloom before autumn arrives are the slender, and the little ladies' tresses (Spiranthes gracilis and Spiranthes tuberosa). As their generic name suggests, these orchids have their flowers arranged in a spiral around their stems, a feature much more pronounced in S. gracilis than S. tuberosa. Spiranthes gracilis is the larger of the two species, both in height and flower size. It may grow from nine to twenty inches tall, with several dozen one-quarter-inch long, tubular, white flowers, the lip of each striped with green. Spiranthes tuberosa bears fewer flowers on its stem than Spiranthes gracilis, their being arranged on one side of the stem or forming a very loose spiral about it. The flowers are all white. The flowers of both species can best be viewed with a magnifier while backlit, so that the delicate, veined texture of the petals and sepals may be seen. Both can be found in bloom from the middle of August through September in dry, sandy fields and meadows.

While some types of orchids are more numerous than others, they are, as a group, not abundant, since the conditions they require for growth are strict. In three years, for example, I have found only one specimen each of the yellow, and the ragged fringed orchis. Others, such as the pink lady's slipper and the cranefly orchid are more numerous, but as their habitat steadily decreases in the metropolitan area, they too will become harder to find.

Finding an orchid for the first time can be an exciting experience. You may even want to take it home with you, but don't; bring your camera and take a picture home, instead. Your orchid will last a lot longer that way.

Leon Kesteloo

Adventures on the Meherrin

Excitement and solitude on an historic river

by Shelton H. Short, III

Virginia is endowed with many rivers of beauty, grace and power. Among the more famed are the James, the Shenandoah, the Rappahannock and the New. Less famous but equally exciting is the Meherrin which winds 300 miles from its beginnings near Keysville in Charlotte County to the point where it reaches the Atlantic near Roanoke Island, North Carolina. There is even a theory that part of Sir Walter Raleigh's "Lost Colony" journeyed up this river as far as Bear Element Creek in present-day Lunenburg County, Virginia.

Our adventure began at Westward Mill Bridge in Brunswick County, southeast of Lawrenceville. It was the second leg of our plan to travel the entire length of the river. Earlier we had terminated a four-day exploration of the upper Meherrin at this point. C. C. Wooton's pick-up truck and close to 170,000 miles on it when he picked up Jean Sherbondy and me near Boydton soon after daybreak. We added about 45 more miles on our trek to the put-in point below the bridge. Westward Mill is the last bridge above the Emporia Dam which forms a 210-acre lake near Emporia.

The dry summer had taken its toll but there was still ample water flow to float the canoe. The river was crystal clear as we sped over the sparkling Mill Rapids leaving Westward Bridge behind. Almost immediately we began to see fish in the clean water: pike, a large catfish and scores of schooling minnows. As we drifted along there were occasional herons along with woodcock, crows and various swamp songbirds. Insects, surprisingly, were not a problem and and the cool air was quite refreshing. We saw no snakes and escaped poison-oak, ticks and chiggers on the banks and islands. Paradise!

Rivers have a character all their own. They are at the same time powerful yet yielding. Most of all they are determined. Their paths may be blocked by dams or hills but eventually the river will win out and continue its journey to the sea. Their tortuous windings in the flattest country help to give each stream its unique personality. Their mood changes from the angry roar of rapids to the tranquil quiet of slack water. These are the things the river traveler perceives.

Three times we saw raccoons: twice on the bank and once swimming across the river. There were flocks of wood ducks to break the stillness. Many a basking turtle slipped from his sunning place at our approach. We also encountered two snapping turtles.

The Falls is a section of good whitewater about five miles long located seven miles upstream from Emporia. We had a picnic lunch on a couple of large flat rocks just below one beautiful waterfall. After eating I just had to renew my childhood skills by swinging on a large grapevine hanging over the stream. The climb up wasn't too hard but the trip down was even easier as the vine broke in mid-swing. I got laughs but no applause from my audience.

Soon afterward the tables were turned. Several times low water required that I get out and pull the canoe through the shallow water. In one instance, the current was so swift that I dumped all in the drink as I tried to reboard the canoe. We climbed out on a rock and bailed out the canoe, taking stock of our gear. Missing were two inexpensive cameras, the compass, the remainder of our food and my prayer book which I had used on each expedition we had made along the Meherrin.

In such lovely surroundings we were not deterred by the loss. We retrieved some of the canned goods and rejoiced that no one was injured. Eventually I found both cameras on the gravel bottom and continued to take pictures, not knowing my chances of their turning out. Our clothes dried quickly in the warm sunshine. A buzzard swooped in for a close look, but sailed on looking for less lively prey.

As we made ready to depart, we realized that we had lost one of our large paddles in the mishap. This presented a potentially serious problem, since we were about to enter a section of the river known as Emporia Ponds. Here, the water backs up for seven miles from the dam. With no current, paddling is a must. We could have used a motor but it is not advisable to carry such delicate gear through the whitewater section we had just left. Now we wished we had it. To walk ashore amid the islands and multiple channels in this upper section of the lake didn't seem like a good alternative. We just had to find that other paddle! Soon Mr. Wooton's keen eyes spotted it resting against some reeds about 150 yards downstream from the where we had capsized. We felt great relief to be no longer "up the creek without a paddle."

The lake west from Emporia must be almost a mile wide in some places, and for the last couple of miles we had the wind in our faces, greatly impeding our progress. Apart from the swamp vegetation which was completely different from the upriver habitat, the most interesting phenomena were the huge carp with polka-dot tails. The water may have magnified their lengths, but to us some of them seemed longer than a folded umbrella. A local resident verified that they often grow to over three feet long.

As we neared our takeout point, we thought of the beauty and history of the Meherrin. Its cool waters and shady glens provided recreation, excitement, and a link with the history of this area. Here we were taking out in Greenville County, named supposedly for Sir Richard Greenville, a leader of Sir Walter Raleigh's first expedition to Roanoke Island. □

Growing Up Outdoors

by Sarah Bartenstein

People Outdoors

This month, the Growing Up Outdoors *column is written by the outdoor observers in Judy Bentley's second-grade class at Boyce Elementary School in Clarke County.*

We think you'll agree that, not only do these students write well, they have their eyes, ears and noses tuned to the sights, sounds and smells of the outdoors. Their teacher tells us that she used this column to "inspire" her students. We think that their understanding of, and respect for nature is inspiring.

We thank Ms. Bentley and her students for sharing their essays and poems with us. Our only wish is that we could have printed every one of them; the space just wouldn't allow it.

Here are a few of the pieces sent to us by the youngsters in Boyce who are growing up outdoors.

by Tanya Anderson

The deer knows that winter is coming, but fall is still here. Now it is winter and it is hard for them to go fast. Then they heard a gun go off. They are so scared they all split up and they run right that minute. Now it is spring and the snow and ice are melting. The water is running very fast from the melting snow and ice. The doe has a new baby fawn and it is shaking. Now it is almost summer and two bucks are fighting over a doe. One buck gives up because he has a nice life and doesn't want to be killed. The doe goes with him.

by Wallis Grove

O locust, O locust,
how do your
branches grow?
I never saw
them grow so
fast so fast
so fast.

by Rachel Coumes

How a tree can talk!
Can you grow little tree?
Yes I can.
Can you hear me?
Yes I can.
Can you eat?
Yes I can.
Can you see me?
Yes I can.
Can you get married?
No I can't.
Do you see?
Yes I do see.

by Patrice Sloan

In the fall, the deer go to get their food. They eat twigs, bushes, fish, grass, berries, and leaves. In the summer, the deer get more fur for when winter comes he will be warm and he won't get cold and die!

by William Bray

I am a fawn. I am a baby and I live in a forest. I eat twigs and I drink water. I will grow up to be a deer and no hunters will eat me. Hunters want me to be their skin. When enemies come, I can hide in the leaves. I weigh four to seven pounds. My doe weighs 100-300 pounds and my buck weighs 100-300 pounds. I can hear hunters coming.

by James Shepherd

I am a woodchuck. My fur is brown. On Feb. 2 I come out and if I see my shadow I go back to sleep.

In winter it snows. My home is a burrow. I can sleep a deep sleep.

by Eric Wright

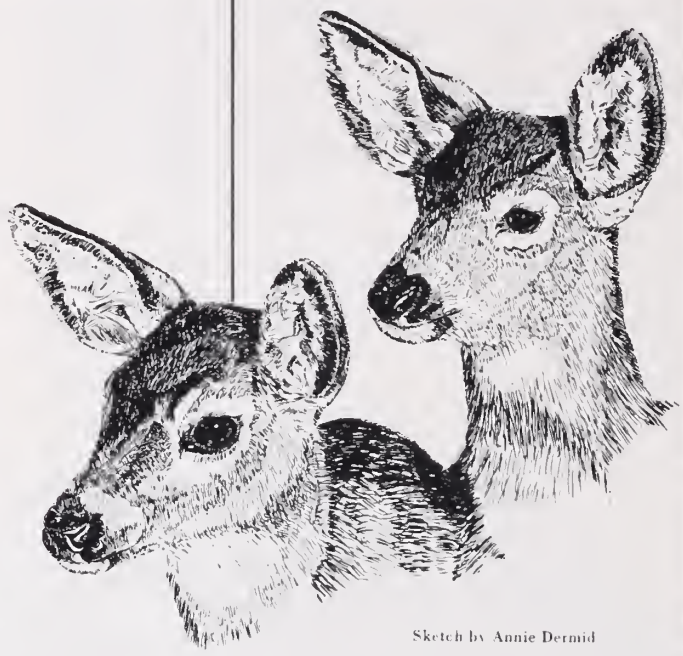
I found a
locust cocoon.
We will open
the cocoon
on Monday.
There is something
in the cocoon
that I found.
It might open.
If it does we
will have to
catch the locust.
I opened the
cocoon today,
because we
want to see
what is in
the cocoon.
It is not
dry it is
egg. There
was yuck in
the cocoon!

by Vicki Boyce

A buck and a doe can weigh 100 pounds to 300 pounds. When a baby fawn is born it weighs 4 to 8 pounds. In the movie I saw two bucks fighting over a doe. A buck and a doe can gallop 35 mph. Deer eat twigs, fish and grass. They drink water.

by James Kendig

I am a raccoon. My home is a tree. I am a hibernator. I will sleep all winter long. After winter I will run from big big bears, foxes, snakes, and skunks. My name is Bobby the raccoon. Black is along my eyes. That raccoon loves STAR WARS.



Sketch by Annie Dermid

Jewels in the Grass

May is prime-time for strawberries

by Gay Weeks Neale

Robin Schroeder

May is the month for wild strawberries in the South. One day you will see them glinting ruby-red like little jewels in the grass or along the edge of a field or a railroad track. They will not be there long — a week or possibly two if the rain does not rot them — so you had better pick them quickly.

Picking them, with the warm May sun on your back and the wonderful smell of them everywhere, is an experience not to be forgotten. It's not every year that the strawberry crop is good. It takes a certain combination of weather conditions to produce the best berries. Some years they dry up and fall off, or rot if it is excessively wet. But if there is a dry spell while the flowers bloom and the bees do their work, and then if some rain falls while the fruit forms, the strawberries are prime. They are usually less than half an inch in diameter, but in a good year they can sometimes grow as large as an inch across. This is rare, and those are the berries that are so tempting that you eat them on the spot.

Crows and deer and other animals love the commercial kind, but they pass over the wild ones and leave them for those of us with sharp eyes. This is probably because the berries grow so close to the ground, swinging down on little stems from under the leaves. Separate the grasses and the grey-green leaves, and there are the sprays of fruit. You pick and pick; your hands get stained red with the juice and still you pick. The berries are usually so small that an hour's picking may yield no more than a quart, but their flavor is strong.

After the berries are picked, you can simply eat them folded into heavy cream or whipped cream or "as is," but you can also make delicious things from them. Here are two ways to serve strawberries that are a treat year-round.

WILD STRAWBERRY JAM

If you feel you have not picked enough strawberries to make this worth your while, you can extend them by adding one part cooked and pureed rhubarb for two parts of wild strawberries, or one part pureed commercial strawberries to two parts wild ones.

Clean the berries. You can leave the green caps, as they cook down. Squeeze one half of the berries to a pulp and mix the two halves together. Add your extender, if you use one, and add both water and sugar in the amount of one-half the weight of the strawberries. For instance, with two pints of strawberries you would add one pint of water and one of sugar. Simmer on a slow heat, stirring often, until the mixture thickens and clots as it runs off the side of a spoon. Pour into prepared, sterile jars or glasses and seal with paraffin.

WILD STRAWBERRY ICE CREAM

Clean two cups of wild strawberries. Squeeze one-half the strawberries to a juicy pulp. Mix together and set aside.

Make a custard with:

- 2 cups milk
- 3 egg yolks
- 1 cup sugar
- 1/4 teaspoon salt
- 2 cups cream
- 4 teaspoons vanilla

Scald milk and pour over beaten egg yolks, sugar, and salt. Cook gently in a double boiler until mixture coats a spoon. Cool. Add cream, vanilla and strawberries, and freeze in a hand crank or electrically cranked home freezer. This makes 1½ quarts of ice cream.

You can freeze the strawberries after they are cleaned by simply storing them in sealed plastic bags in the freezer. Thus you can have ice cream year-round made from May's berries. There is nothing quite like the flavor of them, nor the memory of the sun and the fragrance in the grass. □

Lake Moomaw

by Larry Mohn

Gathright, historically considered the crown jewel of the Virginia Game Commission's system of wildlife management areas, officially reopened for public use on April 1. For those who quietly stalked whitetail deer in the lush meadows or watched a wary rainbow trout sipping mayflies from the head of a long, still pool, much of the beauty and serenity that Gathright once offered is gone. Instead of the fast-flowing Jackson River and rich bottomland that most sportsmen were familiar with, visitors will now find a clear, cool mountain reservoir.

Much of what sportsmen had found attractive at Gathright is indeed now under water. However, the lake behind Gathright Dam, now officially called Lake Moomaw, offers an outstanding character of its own. Outdoor recreation eliminated by the construction has now been replaced with a diversity of new recreational opportunities. In addition, the remaining 13,300 acres of the Gathright Wildlife Management Area is still available for public enjoyment around the lake.

The Gathright Project was authorized by Congress in 1946. However, the U. S. Army Corps of Engineers did not begin construction until 1969. The dam is a rock fill structure with an impervious earthern core, 1310 feet long and 257 feet high. The reservoir will have a maximum depth of 152 feet, be 12 miles in length and offer 43 miles of shoreline. The purposes of the project are to protect downstream property from flooding, regulate flow in the Jackson River to provide improved water quality during low flow periods, and to provide recreation. Dam construction was completed in 1978, but filling did not begin until December 1979. Due to severe drought conditions, filling rates are very slow at present and full pool may not be reached until the end of 1981.

The Gathright Project offers a wide range of outdoor recreational activities administered by the U.S. Forest Service. Although the lake will not be at full pool this spring, boating will be available and ramps should be operational at both southern and northern access areas. The southern access can be reached by Route 600 from Covington to the Fortney Branch boat launching facility. For those traveling from the north, access is by Route 600 off of Route 30 west of Warm Springs. This road takes you to the largest recreational complex and the boat launching facility at Bolar Flats. Both areas may have privately leased marinas operating within the next year.

Visitors may camp at both Morris Hill near Fortney Branch and at Bolar Mountain adjacent to the Bolar Flats boat access area. In addition, there is a small primitive campground that can only be reached by foot travel or boat. Picnic areas are provided at both recreational complexes and swimming will be offered at Bolar Mountain. Swimming, however, may not be permitted this year due to the low water level. Hiking opportunities are available throughout the area with 25 miles of improved trails around the Bolar Mountain complex.

In addition to the two major recreational areas, the Corps will maintain a large visitor center overlooking the dam. The center provides information on the dam operation and construction as well as displays on wildlife, fisheries, history of the area and geology.

The lake will provide good fishing opportunities in the near future, although not this year. Due to the filling schedule, stocking of fingerling fish could not be initiated until 1980. Largemouth bass, bluegill, redear sunfish, channel catfish and rainbow trout have been stocked by the Game Commission. However, it will be 1982 before most of these fish are large enough to be creeled. In the meantime, the smallmouth bass and rockbass, present in the Jackson River before filling, should provide some limited fishing opportunities.

Several modifications in the plan for the reservoir were specifically designed to aid fishermen. Unlike most large reservoirs, Gathright was not completely cleared before filling. Approximately 125 acres of standing timber were left in cove areas to provide fish cover, and several artificial tire structures were constructed by the Corps. These areas, with the numerous natural structures within the lake, should provide an abundance of fish cover, a necessary habitat feature lacking in many large impoundments. Fishermen have the unique opportunity this summer to visit the lake and map much of the existing structure while it is still above water. The reservoir plan also calls for several rather large no-wake zones which should minimize disturbance from other boaters while fishing. To improve fishery potential below the reservoir, the outfall has been specifically designed for creation of a downstream coldwater fishery. The tower can release water from three different depths to provide cold, well-oxygenated water to the Jackson River.

Warmwater fishing for bass, sunfish, crappie and catfish should provide must of the fishing in Gathright. Smallmouth bass should do exceptionally well in the cool, clear lake. The depth of the lake also provides the opportunity to create a two-story fishery. This means that the warmwater fish will inhabit the warmer upper levels of the reservoir while the deep, cold reaches of the lake will be available for coldwater fish such as trout.

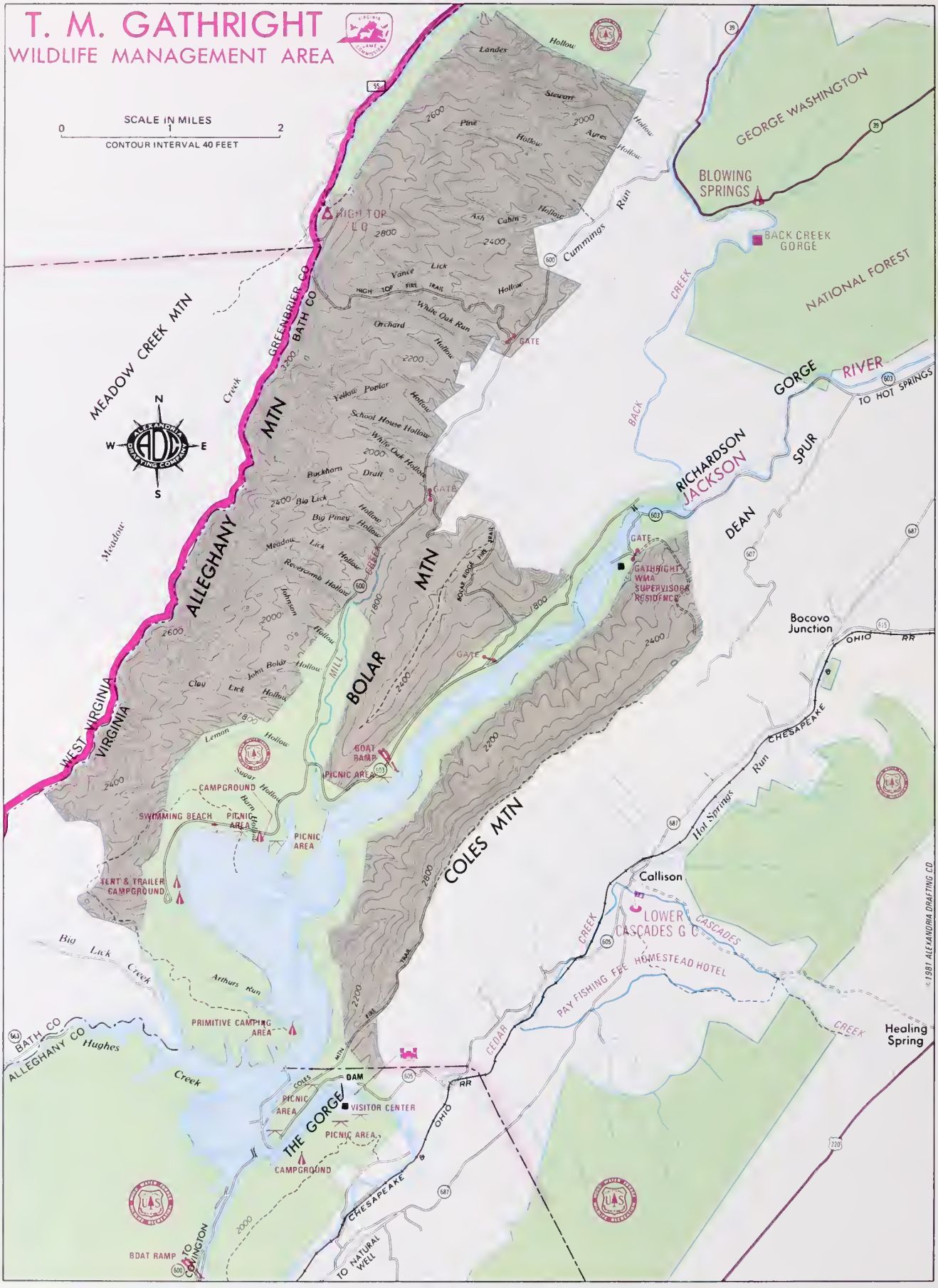
In order to utilize this deep, coldwater habitat, a special migratory strain of rainbow trout has been obtained from the state of Nebraska. The McConaughy strain inhabits the lake for several years, then travels up the inflowing streams to spawn at an average size of three to four pounds. The young fish generally spend about a year in the feeder streams before migrating back to the lake. If successful, this population will provide year-round trout fishing in the lake as well as an annual run of spawning fish into the Jackson River and its tributaries.

Fishing opportunities will be limited in Gathright during 1981 due to the small size of the recently stocked fish. The camping facilities, however, will provide a convenient central location to enjoy the surrounding National Forest and Game Commission lands including trout fishing, spring turkey hunting and hiking. Boating will be the major water-based recreation in 1981 and the angler who plans to routinely fish the lake in the future would be advised to visit the lake early this year to familiarize himself with the lake bottom before it is completely flooded.

Much of the recreation available to Gathright this spring and early summer will depend heavily on weather conditions and completion of minor construction projects. You might want to contact the U. S. Army Corps of Engineers' headquarters at the lake (703-962-1138) or either of the National Forest headquarters responsible for managing recreational facilities (Bolar Mountain Area: 703-639-2521; Morris Hill/Fortney Branch Area: 703-962-2214) to obtain current information on the status of various recreational facilities. □

Larry Mohn is a fish biologist with the Virginia Commission of Game and Inland Fisheries; his district includes the counties of Giles, Craig, Alleghany, Bath, Highland, Augusta, Rockbridge and Boutetourt.

James Kerrick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WILDLIFE MANAGEMENT AREA
SCALE IN MILES
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COLES MTN
WEST VIRGINIA
VIRGINIA
RICHARDSON
JACKSON
DEAN SPUR
GORGE RIVER
TO HOT SPRINGS
GATHRIGHT WMA SUPERVISORS RESIDENCE
Bocovo Junction
Callison
LOWER CASCADES G.C.
HOMESTEAD HOTEL
PAY FISHING FEE
Healing Spring
BOAT RAMP
PICNIC AREA
CAMPGROUND
SWIMMING BEACH
TENT & TRAILER CAMPGROUND
PRIMITIVE CAMPING AREA
THE GORGE
VISITOR CENTER
DAM
TO NATURAL WELL
TO COVINGTON
BATH CO
ALLEGHANY CO
Hughes Creek
Big Lick Creek
Arthurs Run
Meadow Creek
Cummings Run
Hot Springs Run
CHESAPEAKE & OHIO RR
CEDAR CREEK
CASCADES CREEK
BACK CREEK
MILL CREEK
BOLAR RIDGE FIRE TRAIL
HIGH TOP FIRE TRAIL
GATE
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Personalities

by Francis N. Satterlee

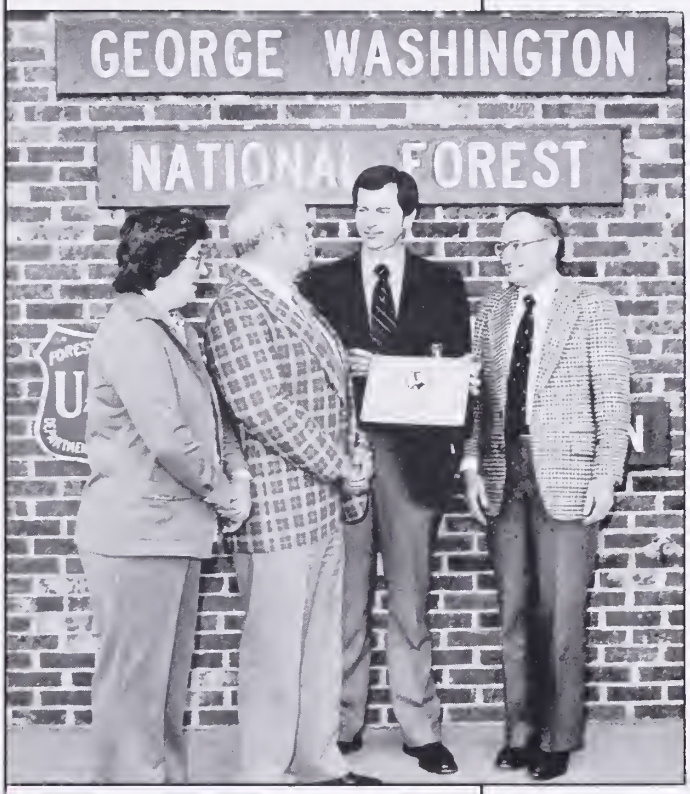
Engle Receives Forest Service Award

by F.N. Satterlee

James Engle, deputy assistant director of the Virginia Game Commission, received the U.S. Forest Service's 75th Anniversary Award on March 13. The presentation, made by Forest Carpenter, Deputy Supervisor of the George Washington National Forest, made Engle one of a select group of people and organizations in the United States to be so recognized by the USFS. The awards were given in recognition of "significant contributions to forestry and conservation."

Witnessing the presentation at the Staunton office of the USFS's Deerfield Ranger District were Mrs. Engle and Game Commissioner Ralph Weaver representing the sixth congressional district.

During his years with the Game Commission, Engle has participated in the acquisition of more than 76,000 acres of land for the organization. This land has in turn been converted to Public Hunting/Wildlife Management and other outdoor recreational uses. □



Left to right: Mrs. Engle, James Engle, Deputy Supervisor Carpenter, and Commissioner Ralph Weaver (Sixth District)

(Left to right) Francis N. Satterlee, Commissioner Dolph Hays, Roger Pearce, and Jack W. Raybourne

Game Chief and Pilot Recognized by Ishi Bowhunters

by Sarah Bartenstein

Two Game Commission employees were recognized for service to the citizens of Virginia at a meeting of the Ishi Bowhunters in March.

Jack W. Raybourne, chief of the Commission's game division, accepted a Wildlife Management Award on behalf of the members of the division for their efforts in that area. Roger Pearce, president of the Ishi Bowhunters, cited the increase in deer and turkey populations in Virginia as a result of the management and research programs carried out by the game division under Raybourne's leadership, and commended the staff for their efficiency and cooperation with the club. In acccepting the award, Raybourne stressed that the division's field staff is largely responsible for the success of the agency's management programs.

Raybourne was to have received the award a year ago, when he was scheduled to give a program at a meeting of the club. On the day of the meeting, however, he was snowbound, so his program was rescheduled, and Francis N. Satterlee of the Commission's education division filled in for him.

At the same meeting in which Raybourne received his 1979 award, Satterlee, the Game Commission's information officer/pilot, received the club's 1980 award. In presenting the award, the club recognized Satterlee for his invaluable contribution to the residents of the Fredericksburg area following a March 1980 oil spill which threatened their water supply. Satterlee flew over the area and found the source of the spill so that federal and state agencies could begin containment and clean-up operations. Satterlee's work in this area is detailed in the July 1980 issue of *Virginia Wildlife* (Outdoor Notebook, "Commission Pilot Locates Oil Spill").

It Appears to Me

by Curly

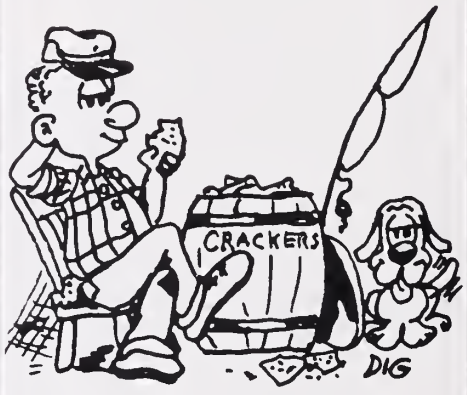
. . .A PERSON OUGHT TO HAVE ONE

With boating season just aroung the corner, all you seasoned salts and "would-be's" should remember that the National Oceanic and Atmospheric Administration (NOAA) has free listings of the charts they produce. To get your own copy of these lists, simply drop a line to the U.S. Department of Commerce, NOAA, Rockville, Maryland 20852.

Those of you who live in northern Virginia may be interested to learn that the Fairfax County Council of the Arts had recently begun publishing the "Northern Virginia Arts Quarterly." This free publication is available in the libraries of Arlington, Fairfax County, and Alexandria. The NVAQ lists all manner of information pertaining to the arts, including the dates of performances at Wolftrap and other popular theaters. If you are interested in learning more, phone the folks at 703/941-6066.

If your interests are currently (pun intended) along the lines of gadgets electronic, you will simply have to "get ya" a copy of a nifty catalogue titled "Inovision." This gem is being called the catalogue of high technology and some of the newest products available are listed. Whatever your specialized interest is in electronics, it will no doubt be among such items as pulse-takers, video recorders, devices which conserve electricity, calculators, radios, etc. which are contained in this free publication. Interested? Call 800/527-0263.

Our friends over at the U.S Fish and Wildlife Service have been at it again. They have produced a handy little eight-page pamphlet which tells the "why" and "how" of waterfowl regulations. Squeezed into those few pages are descriptions of the relationship between waterfowl hunting and nesting surveys and a list of the factors which determine hunting seasons and bag limits. They have even included a bit about banding and a discussion about the value of satellites in relation to goose habitat. "Waterfowl Regulations: Where and How?" is available free in single copies



from the U.S Fish and Wildlife Service's Publication Unit, Department of the Interior, Washington, D.C. 20240.

Signs of spring come in different forms, odors and hues, all of which make the mind wander and the heart beat faster. I reckon I like all of the varied indications; however, one sign really turns me on: catalogues. It really doesn't make any difference what kind of product is advertised; it all looks inviting to me, even if I have no earthly use for a shiny red "giberflibbit." Next to the L.L. Bean's and others with similar listings, I guess I will have to say that gun and ammunition catalogues are my favorites. The folks over at Remington Arms have printed their new, 1981 edition and you can get a single copy by requesting it from Remington Arms Company, Inc., Bridgeport, Connecticut 06602.

. . .FOR YOUR BOOKSHELF

Well, Joan Cone has done it again. . . this time in spades! You readers are no doubt familiar with her frequent contributions to *Virginia Wildlife* Magazine in the form of game- and fish-cooking articles. Lots of you will also remember that some years back, she wrote a pamphlet on game cooking for the National Rifle Association. Following that successful venture, she branched out and wrote an extremely popular book, "Easy Game Cooking." That's what she has done. Now let me tell you about her newest product: "Fish and Game Cooking." This soft-cover gem consists of about 400 pages depicting some of the most mouth-watering, time- and energy-saving, innovative recipes a body could imagine. In reading through it — and I warn you, it does wonderful things to your appetite — I had a difficult time deciding what to describe to you from the wide and varied contents. I was torn between such recipes as Gingersnap Rabbit for Pressure Cooker, Zesty Quail in Skillet, Microwave Bouillabaisse, Venison Rutabaga Stew for Crockpot, Crab-Flounder Newburg, and so many others. It became impossible to choose a favorite. So I am taking the easy way out by telling you about her recipe for shark. I can attest to it because I had the pleasure of eating it shortly after she devised the recipe. Both Joan and her husband Art think that a great deal of really good protein is wasted when fishermen destroy shark and dogfish. As she explains, "Shark meat contains more protein than either milk, eggs, oysters, salmon or mackerel. Besides shark is boneless and offers such qualities as firm texture, leanness, mild flavor, and cooking versatility." When I ate shark at the Cones' home in Williamsburg, it reminded me of flounder. It was firm, not oily, and simply delicious. But don't take my word for all these marvelous things. . .get yourself a copy of "Fish and Game Cooking" from EPM Publications, P.O. Box 442, McLean, Virginia. The price is $9.95 postpaid and you'll hug yourself for it.

. . .AND THEN

On the subject of Destiny, Euripides penned the following a couple of thousand years ago. The belief that fate will prevail no matter what is by no means confined to the superstitious. "I have been versed in the reasonings of men, and fate is stronger than anything I have known." From the Royal Bank of Canada Letter. □

Leon Kesteloo

Silver in our Streams

Virginia offers more trout waters than you might have imagined

by Paul H. Bugas, Jr. and Larry Mohn

Ask any freshwater fisherman what his most rewarding experience in the field was, and he is likely to start talking about his first encounter with a wild trout. Whether the quarry was a spectacularly-colored brookie, a leaping rainbow, or a moody brown, most will agree that the sensation of stalking, hooking, and landing a stream-raised salmonid ranks high on their list of memorable outdoor experiences.

Native trout fishing in any one of the Old Dominion's cold mountain streams is a treasure enjoyed by past generations of anglers and is currently more popular than ever. The resurgence of America's interest in the undeveloped areas of our nation's public lands, starting in the late 1960's, can clearly be seen here in Virginia. Backpackers by the hundreds leave the comforts of home every year to partake of one of the finer aspects of life: trout fishing.

Many of those who have discovered the joy of back country hiking have also become acquainted with various methods of procuring native trout from a nearby stream to put dinner on the table. And anglers who tired of the crowds associated with put-and-take stocking have begun to leave these streams in larger numbers to enjoy the solace offered by our many wild trout streams. Thus, a new wave of outdoorsmen are, in fact, putting increased fishing pressure on a resource that was once lightly fished by mountain folk and a handful of fly rod enthusiasts.

The Virginia Commission of Game and Inland Fisheries recognized that this rapidly increasing pressure may be having damaging affects on trout populations. Therefore, in 1975, the Commission's fish division initiated an ambitious project to gather information on all coldwater streams in western Virginia. This included identification of all streams containing trout, estimates of carrying capacities of each stream, physical and chemical data, and age and growth data for trout populations.

The results were profound. Before the project began, it was believed that the total wild trout resource in the state numbered only 200 streams, totaling 600 miles in length. At the completion of this endeavor, the tally shows that Virginia boasts over 2,000 miles of wild trout water contained in 450 streams! So the Old Dominion has one of the best native trout resources in the southeastern U.S.

This information has also given biologists a good idea of how our native brook trout population stands in comparison to those of rainbow and brown trout. Because the brook trout is the only species of salmonid (fish in the trout family) indigenous to the Appalachian Mountains, its importance to sportsmen, environmentalists, and concerned citizens is primary. The brookie, or "native," is particularly vulnerable to minute changes in the environment, in contrast to its imported cousin, the brown trout, and its western U.S. counterpart, the rainbow trout. Brook trout can only tolerate cold, silt-free, well-oxygenated streams in order to maintain a stable population. Poor timber practices, land clearance for home development, farming, the introduction of non-native species, and the consequences of natural disasters have reduced the brook trout's range drastically over the last 50 years. The overriding concern of many sportsmen's groups is to make sure that this remarkable fish is protected for posterity, and that begins with maintaining present habitat and reclaiming neglected water. Of the 2,000 miles of trout waters identified, 67 percent remain pure native brook trout waters. Wild rainbow trout occupy 20 percent of the Old Dominion's coldwater streams, while the remaining streams belong to the brown trout or various combinations of the three species. In most of the southeastern United States, rainbows have displaced brook trout to a far greater extent in Virginia. In fact, more brook trout water now occurs in Virginia than in all the remaining southeastern states combined.

The distribution of brook trout across the western part of the state is clearly delineated by three major geological formations. Primarily, the Blue Ridge Mountain region is the stronghold of the native brook trout population in Virginia. A large portion of these streams lie within the confines of the Shenandoah National Park, and are protected by rigid regulations. Several counties south of the park also contain streams that exhibit similar characteristics to those found in the northern Blue Ridge. Most of these creeks are under the control of the U. S. Forest Service.

Another group of brook trout streams is concentrated in the Mt. Rogers/Blue Ridge Plateau area. This region is comprised of several counties that lie south and west of Roanoke and east of the Valley. A great deal of the Mt. Rogers area is federally owned, while the Blue Ridge Plateau is mostly private property. An interesting discovery in the Mt. Rogers section is that nearly 70 percent of the once-pure native brook trout habitat has been invaded by rainbow trout. More than in any other part of the state, it appears that these rainbows have found themselves a permanent home in these waters, and have succeeded in pushing the brookie to the extreme headwaters in most cases. The rainbows are the offspring of "holdover trout" from past stockings, or are the result of introductions by unidentified individuals. The phenomenon of rainbow invasion in Virginia is primarily limited to this area, as only a few isolated cases have been identified in the northern reaches of the state.

A third grouping of native brook trout streams can be found in the Alleghany Highlands. This section is located west of the Valley, and is characterized by long ridges and narrow bottoms. Once again, the U. S. Forest Service owns the larger portion of the Alleghany Highlands where the native trout populations are found. Generally, streams in this region are smaller than in other areas and stream flows often fluctuate drastically.

Throughout all of Virginia's trout regions, the fish division's survey demonstrates that brook trout populations were generally below potential levels. The major cause for low brook trout numbers are creeling of trout before they reaches sexual maturity. Most brook trout in Virginia spawn as they approach their second year. The size of most of these two-year-old trout ranges from five to seven inches. Spawning takes place in late October or early November in the headwaters of mountain brooks. A nest of gravel is made at the foot of pool areas and only 80 to 200 eggs per female are deposited in the silt-free substrate. This number is minute compared to the tens of thousands of eggs that are found in mature warmwater fish (bass, bluegill, etc.).

Of this relatively small number of "B.B.-sized" eggs, usually less than five percent survive to adulthood. This study found that Virginia brook trout, given the chance to die of "old age," seldom live longer than four years. With these facts, it can be concluded that these trout succeed in replacing themselves only twice in their lifetimes. Compared with their prolific warmwater counterparts, it is easy to see why our wild trout resource needs to be carefully managed.

Overfishing of our wild trout streams has been one of several factors contributing to the decline of these fish. Historically, anglers in Virginia have been allowed to creel brook, rainbow, and brown trout of any size. This type of regulation has been extremely harsh on the brood stock of our wild trout. Since trout have a limited reproductive capacity, cropping fish from four to seven inches in length has, in fact, reduced the trout's chances of propetuating itself that much more.

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Jerry Tritt

Paul Bugas

Capturing Your Catch On Film

by Gerald Almy

This flier's size (below) is put into perspective by the man's hand. Rebecca Almy reels in a rockbass: the interesting angle for this shot was obtained by the photographer positioning himself below the subject and shooting upward (right). The author hoists a stringer of Occoquan Lake crappie. When you're fishing alone, you can use a tripod and a self-timer, as he did for this shot (center)

It's almost summer, and time for a predictable sequence of activities: vacations, fishing trips, and pictures. The three pursuits mix well, but usually the first two turn out infinitely better than the visual records of the events would suggest.

After all, wasn't that $400 offshore fishing trip more memorable than the fuzzy image of a dried-out fish carcass sprawled across the baking planks of the dock? Didn't your fishing crony summon a bit more enthusiasm in fighting that massive gamefish than the dimestore smile he's wearing in the dockside snapshot would indicate?

Probably so. But like most of us, you were too busy fishing, eating, drinking, or whatever, to pick up the camera when the real drama and action of the day unfolded. This is all too often the case, whether trolling 50 miles offshore on the billfish grounds or hunkered down in a johnboat on a backwoods pond casting for bass.

I know from experience. One of the most grueling tasks an outdoor writer faces is putting down his fishing pole long enough to procure printable photographs to accompany his scribblings. And if it's hard for someone who might be paid for his shutter snappings, it must be doubly difficult for others.

But when you do manage to put the rod down just a few times during the fishing day, the results when you get the pictures back a week later almost always seem worth the effort. Of course, if all you want a camera for is a "witness"to record that a certain quarry was caught, in case a skeptical friend doesn't believe your latest fish tales, the cliched angler-holds-fish-back-at-the-dock shot will do fine. It doesn't matter if backgrounds are cluttered, focus is bad, horizons slanted, and both angler and fish stiff and glassy eyed.

The fish is there; the photo proves he was caught.

If you want more out of your photos than this, the first step is to apply that vital ten or 20 minutes throughout the

Rachel Reynolds and Jason Archer land flounder. Try to capture the spontaneity of angling for more interesting pictures.

day to photography, instead of 30 seconds back at the dock. Beyond this, keeping a few techniques and tips in mind should yield a collection of slides or prints that brings back some of the real drama and poignancy of your angling expeditions.

Everyone wants photos of the angler with his or her catch, but such compositions are inherently difficult because you're actually trying to take two portraits at once: one of the fish and one of the fisherman. The best way to unite these two disparate subjects in the photo is to have the angler looking at the fish (and preferably doing something with it). This way, the subject's eyes will lead the viewer of the picture to the fish, joining the two separate elements of the photo.

There's nothing more disconcerting than pictures of an angler with a dead fish, both staring bleakly back at the camera. Besides emphasizing the dichotomy of the subject matter, such shots inherently look posed and stiff. And they are, of course — otherwise the fisherman wouldn't be looking at you.

All of this boils down to the photographer's responsibility to pick up the camera before the angler has captured the fish and is sitting there with nothing left to do except stare at you and grow increasingly awkward in his poses. Have the camera around your neck (yes, it's heavy) or on the boat seat next to you throughout the day. Start using it as soon as a fish is hooked.

This way, you'll get *action*. You'll also get a picture that shows a phase in the fishing sport where quarry and pursuer are truly joined, forming a unified photographic subject.

Some of the things you can shoot the fisherman doing are fighting the fish, landing it, taking it out of the net, unhooking it, and fastening it to the stringer or releasing it. All will be infinitely more interesting than your buddy grinning starkly back into the lens. They'll also tell a story,

Hickory shad, and the ultralight tackle used to take him

showing elements of the sport that are more vital than the actual fish in hand after the battle is won.

Effective fishing shots can also be taken without any fish in the picture. Sometimes, the single image of an angler in his habitat can make a starkly impressive composition.

With such shots it's almost always helpful to have foreground objects that help frame the picture, add depth, and lead the viewer's eyes to the central subject matter.

Fish pictures can also be a conservation tool. If you snap a photo of a particulary noteworthy specimen as soon as you catch him, there's no need to kill the fish. One effective way to make such a shot is to hold the camera in one hand and take a close-up of the fish in your other hand, just barely out of the water.

Whether you choose to release the quarry or not, always keep the quantity of fish in pictures at a minimum. Numbers just diffuse attention and lose the viewer's interest, not to mention looking rather piggish.

Camera choice is too broad a subject to treat here. The 35 mm single lens reflex is the overwhelming first choice of amateur and professional photographers today, and you can pick up a good one for $200 or less by shopping around.

If you decide to invest in such a camera, get an automatic (one that sets the shutter speed, or preferably the f-stop, for you). Instead of the normal 50 mm lens such cameras usually come with, ask for a 35 or 28 mm. Since so much fishing is done on boats, these lenses with a wider field of view will allow you to catch more of the fishing action.

The automatic feature simply saves one more adjustment step that you have to take before pressing the shutter. This can be very important when a fat smallmouth or bluefish is acting up on the surface and you want to catch some of his antics on film.

Even with an Instamatic or similar-type camera, however, you can improve the composition of your fishing photos and avoid the hackneyed subjects by just taking a little time out from the fishing day for picture shooting. □

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An excellent case that clearly reflects the impact of overharvesting trout is depicted by samples taken of the Conway River in Greene County. Here, trout can be creeled at any size, with a total daily limit of six fish. The brook trout biomass estimate from the Conway River was a dismal 5.6 pounds per acre. However, the fish-for-fun Rapidan River, a neighboring stream with similar characteristics and much greater use by fisherman, boasts a standing crop of 33 pounds per acre. Brook trout biomass estimates in other Shenandoah National Park streams maintain comparable trout populations, which can be attributed to the more restrictive regulations. A comparison of park streams with other mountain streams throughout the state shows that most can produce 35-45 pounds per acre of trout if properly regulated. However, severe overharvest of brood stock has occurred in many public streams.

An important discovery made by this survey was the outstanding growth rate of Virginia's brook trout. In a normal mountain stream, the average brookie grows to three inches by the first summer. The following summer, the same trout will be five to six inches long, and by the third summer of life, the fish will be approximately eight inches in length. Some of these trout will see a fourth summer, with very few making it through five years. This study determined that most native brook trout die of natural causes before reaching four years of age.

A common misconception of many brook trout fishermen is that native trout are naturally small and should be harvested at any size. While it is true that the majority of brook trout found in any given stream fall within the two to six-inch range, it is not uncommon to find numerous two-and-a-half-year-old brookies that measure from seven to ten inches in total length.

As a result of their limited reproductive capacity and other factors, brook trout do not usually over-populate and "stunt" as do many of their warmwater cousins. Indeed, an angler will catch more small trout when he concentrates his efforts on headwater streams, but will notice a definite increase in the size of his catch as he progresses downstream. Most adult trout appear to utilize these tributaries as spawning grounds, so fingerling trout in large numbers naturally linger there during their first summer before moving downstream to better habitat and a more plentiful food supply.

Because this project was the first of its kind in the Old Dominion, the data collected were compared to similar information compiled in other states. It was found that the average length of native brook trout in Virginia was significantly greater than those found in other eastern states. One reason that Virginia brookies attain a greater average size might be the longer growing season here. Mild autumns and early springs contribute to their outstanding growth by allowing several extra weeks of feeding activity often missed in the northeastern states.

The results obtained from the population studies have aided dramatically in understanding the biology of the southern brookies. By linking the size of brook trout at sexual maturity with natural mortality at various age groups, fishery biologists have determined that a seven-inch size limit on trout would be in the best interest of protecting this native species from overharvesting in years to come. A statewide size limit of seven inches would ensure increased trout reproduction in streams that are especially prone to angling pressure. Brook trout creeled before they reach the five- to seven-inch range of sexual maturity are removed from the creek before they are allowed to spawn at least once. A seven-inch size limit would force anglers to put smaller trout back into the stream, allowing the fish to complete one reproductive cycle in the fall before moving into the catchable size range the following spring. It is extremely important to afford the brook trout at least one chance to replace itself, as the survival rate from egg to adulthood is less than a mere five percent.

Annual mortality figures indicate that brook trout numbers in Virginia tend to drop drastically after the fish reaches two and a half to three years of age (eight and a half to nine inches in length). If they die of natural causes at this age, it follows that if creeling is desirable, these fish can be taken from the stream without detriment to the total population. A size limit of eight inches is undesirable because many fish of harvestable length would succumb to natural death before recruitment to the legal size. A six-inch size limit would serve almost the same purpose as the current regulation of no size limit. At six inches, a young fish would be cropped from the population at an age where most Virginia brook trout are sexually immature.

To further emphasize its dedication to preserving the brook trout for future generations of Virginians, the fish division has made other important decisions concerning put-and-take stocking and native trout. Most trout fishermen will concede that stocking catchable-size trout in any body of water attracts large groups of anglers. Research shows that the unprecedented fishing pressure that accompanies this type of fishing experience negatively affects the other wild trout species in the same stream. So, in an effort to lessen the frequency of this situation, the fish division has an official policy against adding any new streams to the put-and-take stocking list that are top-quality native trout waters, and to remove good quality wild trout streams from the stocking program when suitable replacement streams are available. And no stocking of catchable trout in streams that presently hold good populations of wild brook trout will occur in the fall of the year. This measure was created in order to keep crowds away from those streams that serve as spawning sites for brookies in October and November.

The recently-adopted seven-inch minimum size limit on all trout caught in Virginia waters (effective January 1, 1981) is an important step forward in helping these wild trout populations reach their potential, in terms of producing more and larger trout for the fishermen of the state. And the information provided by this study will allow state fishery experts to coordinate with associated federal, state, and local agencies on matters that concern our wild trout heritage with a greater degree of knowledge than in the past. With good interagency planning, further negative effects on trout streams can be avoided or diminished in the future.

Our state fishery biologists' concerns do not stop at wild trout management. Proper use of the entire coldwater spectrum in order to benefit the sportsman is the fish division's ultimate goal. The coldwater inventory has revealed many miles of unused streams that can be of great consequence in expanding and diversifying trout fishing in Virginia. □

Editor's note: A series of special regulations has been passed by the Commission that will go into effect this year, along with the new general regulation. Virginia Wildlife *will feature another article in a future issue dealing with the discussion and analysis of these special regulations.*

Paul E. Bugas, Jr. is an assistant fish biologist with the Virginia Commission of Game and Inland Fisheries. Larry O. Mohn is a district fish biologist with the Commission. Both work in the district comprised by the counties of Giles, Craig, Alleghany, Bath, Highland, Augusta, Rockbridge and Botetourt.

Outdoor Notebook

edited by Mel White

Operation Respect in Richmond

Rick Perry

Flying the banner of Operation Respect, the Curles Neck Hunt Club is working hard at upgrading the image of sportsmen in the Richmond area. Under the leadership of club president Donald Shinn, the group sponsors an annual deer hunt for local youngsters. The hunt begins with a talk on hunter safety by the county game warden and ends with the presentation of a custom-made knife to the youth who has taken the largest deer. The knife is crafted by local resident and world-renowned knife-maker Ben Shelor.

In addition to the youth deer hunt, the club sponsors hunter safety courses. The six-hour course was presented recently and attended by 85 sportsmen interested in becoming better and safer outdoorsmen.

The club has also assisted the local game warden by reporting spotlighers in their area, and in at least one case, keeping an eye on the violator until the warden arrived.

Working under the principles of Operation Respect, the Curles Neck Hunt Club is greatly enhancing the name of area sportsmen. □

New Map Series

The U.S. Fish and Wildlife Service and the U.S. Geological Survey (Department of the Interior) have cooperated in the joint production of the Atlantic Coast Ecological Inventory Maps at a scale of 1:250,000. These maps depict the entire 76,000-square-mile coastal zone, major land-use designations, and all significant fish and wildlife species and their habitats.

It is now possible, at a glance, to select any site on the East Coast from Maine to Florida and locate on a small-scale map the various types of fish and wildlife (such as endangered species, migratory waterfowl, and commercially-important fish populations)that use the area and the different land-use designations nearby, such as national wildlife refuges, state waterfowl management areas and national and state parks.

Covering portions of 15 coastal states, the series of 31 maps depicts 364 important plant and animal species, highlighting those with special protections and listing the purposes for which they use particular coastal areas (breeding grounds, wintering areas, etc.) This information, along with the special land-use designations, is plotted on USGS base maps at a 1:250,000 scale (one inch represents about four miles). The ecological data on the maps cover an area bounded on the inland side by the various states' coastal zone limits and on the ocean side by the three-mile offshore limit, the demarcation line between state and federal jurisdictions.

The maps are reproduced in five colors and distributed in a convenient four-by-eight-inch, pocket-fold format. They are available in complete sets or individually at $2 per copy. You may order the maps from the U.S. Geological Survey, Eastern Distribution Branch, 1200 South Eads Street, Arlington, Virginia 22202. □

An Aerial Acrobat

Grace Draper

It was just before Christmas, at dusk — that magical time of the day when the all-enveloping curtain of night noiselessly descends, signalling a quiet time for most woodland things. We had been hearing strange "bzeeps" for several nights down around the old barn, an area that had been fairly damp and marshy for weeks due to the continuin g winter rains. This night we were able to identify the little creatures who were making these strange noises. There, running across the brown grass, was an equally-brown woodcock, quite difficult to see in the rapidly-darkening haze.

So woodcocks had moved into our farmyard, and we were delighted to have them as neighbors all winter. When the moon was bright, we would hear them calling back and forth (a "bzeep" here, an answering "bzeep" there) off and on for most of the night.

We again felt privileged that first night late in February when we observed the comical courting flight of a male bird. We had gone out to close up the chickens for the night and heard the "bzeeps." Suddenly, after a series of six or seven of these calls, and from only a few feet in front of us, a lone bird zoomed upward into the air with the characteristic whistling wings of a woodcock. He soared in a circle once around the top of the old oak tree, suddenly vanished in the misty darkness, and plummeted to the ground before us almost into the exact spot he had just left. There was a quick series of clucking sounds which were answered, we presume, by his mate who was probably also watching the performance. Then he began the "bzeeps" again, followed by another soaring performance identical to the previous one. This routine continued over and over, always with the bird returning to the same spot.

It was some time before we retreated into the house from the darkness of the February night to the cold supper that had had to wait until we could tear ourselves away from the woodcocks.

The woodcock is a close relative of the many slender-billed shorebirds we find on our coast. However, they live inland and frequent woodland edges and thickets, generally damp or marshy areas where he can easily find earthworms, their favorite food, for which they probe in the wet ground with their long bills. This also explains the nighttime activity, as earthworms are most active at night. The bird is generally migratory from the north, but there are a few year-round residents in Virginia. Its plumage consists of a variegated pattern in brown, grey, and black, giving it an almost perfect camouflage when on the ground. This also makes the bird quite difficult for hunters to spot, and it is a favorite game bird. Its swift and sudden whistling take-off when surprised and flushed also aids in making it a difficult target for hunters.

We have often seen single woodcocks at our farm, but during very wet winters we have had them around in numbers close enough to actually observe, hence the fascination with their aerial antics. We hope the habitat around our farm is such that the birds will remain with us; we would be very happy to welcome them as permanent residents to join all the other interesting wildlife which call our farm their home. □

Here's How to Cook Sea Trout

by Joan Cone

Shakespeare was right after all. "What's in a name? That which we call a rose, by any other name would smell as sweet," could just as well apply to seatrout.

For seatrout are known by many names, yet are as much fun to catch and delicious to eat no matter what you call them.

Seatrout, gray trout, weakfish, squeteague, tide runner and and yellowfin are all the same fish. Spotted weakfish, spotted seatrout and salmon trout are varying names for another species found in our waters.

Though both species of seatrout have tender white meat, they do have a tendency to become very soft and should be iced down immediately. Do this and you'll benefit from a fish with low caloric content that can be cooked and enjoyed in many different and mouth-watering ways.

This recipe provides a complete dish right in the skillet.

LEMON DILL SEATROUT

1 pound seatrout fillets, skinned
¼ cup water
2 tablespoons lemon juice
1 tablespoon grated lemon peel
1 teaspoon salt
⅛ teaspoon pepper
1 teaspoon sugar
6 ounces medium noodles
2 teaspoons dried dill
1 cup plain yogurt

Thaw fish if frozen. Cut fish fillets into serving size portions. In a 10-inch skillet, bring water, lemon juice, peel, salt, pepper and sugar to a boil. Add fish fillets to liquid and simmer for 5 to 10 minutes or until fish flakes easily when tested with a fork. Meanwhile, cook noodles in boiling salted water according to package directions. Drain noodles. Stir dill and yogurt into fish dish and heat thoroughly. Serve immediately over drained noodles. (Serves 3)

SUMPTUOUS FILLETS

1 pound seatrout fillets, skinned
2 tablespoons melted butter
½ teaspoon salt
Dash pepper
1 can (4 ounces) mushroom stems and pieces, drained
½ cup Cheddar cheese, grated
1 tablespon chopped parsley

Thaw fish if frozen. Cut fillets into serving size portions. Combine butter, salt and pepper. Chop mushrooms and then combine with cheese and parsley. Place fish on a well-greased broiler pan and brush with butter. Broil about 4 inches from source of heat for 3 to 4 minutes. Turn carefully and brush with remaining butter. Boil 3 to 4 minutes longer or until fish flakes easily when tested with a fork. Spread mushroom mixture on fish and broil 2 to 3 minutes longer or until lightly brown. (Serve 3)

BAKED STUFFED SEATROUT FILLETS

1½ pounds seatrout fillets
½ teaspoon salt
Pepper
¼ cup hot water

1 teaspoon chicken bouillon
4 slices whole wheat bread, cubed
1 teaspoon onion juice
1 tablespoon butter, melted
1 tablespoon parsley
1 teaspoon lemon juice
1 tablespoon butter, melted
Paprika

Thaw fish if frozen. Sprinkle cut side of fillets with salt and pepper. Dissolve chicken bouillon in water. In a mixing bowl, combine chicken bouillon, bread cubes, onion juice, 1 tablespoon butter, parsley and lemon juice. Place half the fillets, skin side down in a well-greased shallow baking dish. Place stuffing on fish and cover with remaining fillets, skin side up. Drizzle top of fish with remaining 1 tablespoon butter. Sprinkle with paprika. Bake in a moderate oven, 350° F., for 25 to 30 minutes or until fish flakes easily when tested with a fork. For the microwave, cook on HIGH power for 10 to 12 minutes or until fish flakes easily. (Serves 4 to 5) □

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On the Waterfront

edited by James N. Kerrick

Marine Sanitation Devices (MSD)

Effective February 1, 1980, all vessels with toilet facilities or external fittings installed must be equipped with marine sanitation devices. Vessels for which keels were laid prior to January 30, 1975, and which are not presently equipped with toilets do not have to have toilets or MSD's installed.

To place this in perspective in Virginia, there are approximately 140,000 motorboats registered in the state. Half of these are less than 16 feet in length and cannot accomodate toilet facilities. The remaining 70,000 vessels, 16 feet or longer, may or may not have toilets currently installed. It is estimated that about 10 percent of these are presently fitted with toilets.

The point of all of this is to achieve the goal of the federal Water Pollution Control Act which reduces the discharge of pollutants into the waters to zero by 1985.

From the boater's point of view, if you have a toilet or fittings for one, you must have an MSD. Direct discharge toilets are illegal. The U.S. Coast Guard will be enforcing this law. They are out there to help you, but if they board your boat you can be sure they'll check out your MSD as well as safety requirements.

Spring Tune-Up Tips to Keep The Outboard Running All Season

These days, more and more people are doing it themselves, whether it's tuning up the family car or remodeling that spare room in the house. More and more boaters, too, are servicing their outboard motors themselves.

The best place to take an outboard for service — whether it's a pre-season check or a major overhaul — is an authorized outboard dealer. He's the service *pro*. Still, outboarders everywhere are discovering it's surprisingly easy to prepare their motors themselves for the new boating season. Here, from the OMC service experts, are the 10 important steps to getting an outboard ready to go after a winter's worth of storage.

1. Check the lubrication in the lower unit. Make sure it's filled to the proper level. If it looks like it has been leaking, have a service expert check it out, since it could indicate the lower unit seals and gaskets need replacing. And if it wasn't done for off-season storage, drain the gearcase and refill it with the manufacturer's recommended lubricant.

These days, gearcase lube comes in a variety of containers, from small tubes to gallon containers (complete with a hand-operated pump for clean, efficient application). That means that, whether you have a small motor or a large one, one outboard or a fleet of outboards, the lubrication is available in the size need.

2. If your motor has a power trim or power tilt unit, check the level of fluid in the system's reservoir, and refill with the manufacturer's recommended fluid, as needed.

3. Check your spark plugs. Your outboard can't start quickly and run efficiently if its spark plugs aren't sparking. Remove them, clean them, make sure they're gapped to the correct specifications. And make sure the plugs' terminal connections and wiring are clean, unfrayed, and snug-fitting.

4. Check the boat's battery. Make sure it's filled with water and fully charged. Clean the terminal posts and connectors so they're free of corrosion.

5. If there was unused fuel left in the tank and engine over the winter, it should have been treated with a fuel conditioner before storage. If the fuel *was* conditioned, all that's needed is to make sure the fuel system is tight, without any leaks.

If no conditioner was added for storage, however, the fuel pump filter should be cleaned before adding fresh fuel. Although designs vary from brand to brand, most outboard fuel filters are built for easy cleaning, with step-by-step instructions usually given in the owner's manual. Of course, any old fuel should be drained from the tank and properly disposed of before adding new fuel.

6. Speaking of fuel conditioners, many boaters use a conditioner for winter storage, but neglect its in-season use. Used in much smaller quantities during the boating season, an outboard fuel conditioner helps keep the carburetor clean and reduces plug fouling. A note of caution, however: use only fuel conditioners designed for marine use, not automotive conditioners or additives which could do an outboard more harm than good.

7. Check the propeller. A little ding in the prop can make a big dent in your rig's performance. If the propeller is nicked or gouged or bent, take it to a dealer for repair. If it's too far gone, buy a new one. The best-tuned outboard in the world can't deliver its performance if the propeller isn't working the way it's designed to work.

8. While you're checking the prop, check the bottom of the boat. For clean, efficient running, the hull must be clean and efficient, too. Now's the time to remove any leftover barnacles or dried-up marine algae and weeds.

9. Now's a good time, too, to touch up those inevitable scrapes and scratches a hard-working outboard picks up. Most manufacturers offer factory-matched colors in easily-used spray paint cans. A well-maintained motor always seems to run just a little better, and holds its resale and trade-in value just a little better.

10. After all the mechanical work is done, give the outboard (and the boat) a good spring cleaning. An all-purpose marine cleaner will remove just about all the dirt and grime collected over the winter. An engine degreaser will clean up the engine itself, underneath the power hood. And for that special finishing touch, give the outboard a coat of automotive wax or polish. It'll make it sparkle, and help protect its finish from the sun and the wind and the water.

If your motor needs a little more than the normal pre-season preparation, some manufacturers now offer do-it-yourself repair kits. OMC, for example, has kits designed for the non-expert to service such parts as magneto ignitions, water pumps and carburetors.

A pre-season check-up like this is easy, even for the most unmechanical of boaters. But it'll go a long way towards a season full of boating fun, not service woes.

In Nature's Garden

by Elizabeth Murray

Lucile Walton

The Monkey Flower

It is anticipating slightly to start looking for the monkey flower in May. It does not usually start blooming until June and can subsequently be found in flower throughout the summer until September. Monkey flower likes wet places and is quite common, if not actually prolific, in marshes, bogs, wet meadows and along stream banks in the mountains and upper Piedmont.

The reason for the name is an easy one this time. The flower has the appearance of a rather wry, wrinkled little face, and the generic name *Mimulus* comes from the Latin word for buffoon, 'mimus.'

Mimulus ringens, sometimes known as the Allegheny monkey flower, is a glabrous or smooth perennial which grows about three to four feet high with a square, unwinged stem. The leaves are opposite and sessile, that is, they have no stalks of their own, and they are elliptical to ovate in shape, with long pointed tips and slightly toothed edges. Flowers are borne singly in the axils of the leaves on rather long flower stalks. Each flower is about an inch long, tubular with five unequal lobes contained in two well-defined lips. The upper lip is erect and consists of two lobes, while the lower lip includes the other three lobes.

The blooms are nearly always purple, although a white variety is occasionally found. Two yellow spots on the lower lip lead to a white throat, the entrance to which is almost closed by the palate. All these 'facial' terms, of course, give further credence to the name monkey flower. There is a two-lobed stigma surmounting the ovary in which will eventually develop numerous seeds. *M. ringens* is widely distributed throughout the Northeast, extending from southern Canada down to Georgia.

A closely related species, the sharp-winged monkey flower, *Mimulus alatus*, has a slightly more southerly distribution. It is not found in Canada, but reaches down into northern Florida in places. Since both species occur in our area, it is comforting that they can be distinguished by several rather simple characteristics. The square stem of *M. alatus* has definite wings along the angles — hence the common name. The leaves have their own stalks in contrast to the stalkless leaves mentioned earlier, and the stalks of the flowers are much shorter than those of *M. ringens*.

All monkey flowers belong to the Scrophulariaceae, the figwort or snapdragon family. When I was a child in England, my botanical education was conducted by my mother as she worked in her flower garden. I learned the Scrophulariaceae as the "open-mouth-shut-mouth" family because if you pressed on the sides of her garden *Antirrhinum* (snapdragon) flowers, you could make their "mouths" open and close. Actually you can do this with *Mimulus* too, although the flower is considerably more delicate. And I believe I get more pleasure nowadays out of simply admiring the flowers as they grow! □

KNUTH

Bird of the Month

by Carl "Spike" Knuth

Marsh Bandit: The Yellowthroat

I wandered down a narrow woodlands trail that ultimately lead to a marsh pond created by a dammed-up creek. A bright clump of marsh marigolds grew in the wet grasses near some cattails. From a willow thicket overhanging the creek where it entered the pond came a vigorous warbling, "witchety-wichety-wichety," repeated several times. Moments later, a little masked bird moved busily into view for a brief moment before disappearing into the tangle of leaves and stems.

To a marshland wanderer, the song of the yellowthroat is quite common. In fact, the yellowthroat is apt to be heard more often than it is seen. When it is seen, it is usually near the ground, in dense cover and close to the water. It is a very active bird, somewhat wren-like, showing a definite preference for wet, bushy meadows, swamps, the edges of damp woods, ponds or streams, cattail and bullrush marshes, bogs and streamside willow and alder thickets. Occasionally, you may come across it in the uplands in brush pastures, woodlands edges, grown-over orchards or in blackberry tangles, but it does have a decided preference for wet places. Since it does spend so much time near the ground it is often called the "ground warbler." The yellowthroat is a bold little bird that appears to get very upset when an intruder enters his domain. In wren or chickadee-like fashion, he will scold with harsh, raspy notes.

The yellowthroat is a wide-ranging species that varies in size and appearance in different locales. The northern yellowthroat male is olive-colored above with a bright yellow throat and a black mask edged with white, often called the black-masked warbler. The little guy retains his black mask all year around, whereas many of his warbler cousins lose their bright colors in autumn. I like to call him "marsh bandit." The female is plain olive-colored above with a brownish forehead, a paler yellow throat, whitish eye ring and whitish underparts washed with grayish-brown. Immature birds often lack yellow, being buff-colored or very light yellow on their throats, with white bellies and yellow undertail coverts. Immature males will show the beginning of a black mask late in summer. The size of the yellowthroats vary from 4½ to 5¾ inches.

Another sub-species is the Maryland yellowthroat which is a smaller, paler-colored bird than the northern. Its habits are very similar and its colors in the field are not noticeably different. The Florida yellowthroat is more yellow on its underparts with browner upperparts, wider mask and longer tail and bill. The Florida yellowthroat is a bird of dense growths of scrub palmetto.

The yellowthroat nests near the ground, building a large, loosely constructed, bulky nest well concealed among weeds, cattails, sedges or tussocks of grass. The little female does the building and all the incubating of the three to five eggs. She guards her nest fearlessly, sitting very close and tight as hatching time nears. The little yellowthroat is frequently imposed upon by the female cowbird. The cowbird does not build a nest and lays its eggs in the nests of other birds, including the yellowthroat. Some birds will rebel against incubating the cowbird eggs and will rebuild over the old nest, abandoning their first clutch. The yellowthroat, however, seems to lack the instinct to detect the rouse and goes through a great deal of trouble in raising the oversized cowbird baby. Often its own young are pushed out of the nest to starve. Under normal conditions, the male assists in feeding the young after they hatch and the young yellowthroats are able to leave the nest in about two weeks after hatching. Yellowthroats feed on all manner of insects and insect larvae — especially fall webworms, canker worms and a variety of other caterpillars.

The northern yellowthroat commonly breeds east coast to west coast through the continental United States and Canada as far north as Newfoundland in the east on a line through Hudson Bay to the Yukon in the west. It winters in the Bahamas, West Indies, Eastern Mexico and Costa Rica. The Maryland yellowthroat breeds from southern Pennsylvania south and west through the South Atlantic and Gulf states to eastern Texas. The Florida yellowthroat breeds in Virginia's Dismal Swamp south to Florida and west to Louisiana. So Virginia has the distinction of hosting all three sub-species of the energetic, beautiful little yellowthroat, the marsh bandit. □

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